IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

IVG Immobilien GmbH,	§	
Plaintiff,	§	CIVIL ACTION NO. 4:15-CV-02744
v.	§	REDACTED PUBLIC VERSION
Baker Hughes, Inc. and Baker Hughes Oilfield Operations, Inc. d/b/a Baker Oil Tools, Inc.,	§	
Defendants.	§	

AMENDED COMPLAINT

Plaintiff IVG Immobilien GmbH ("IVG"), by and through its attorneys, complains and alleges as follows:

NATURE OF ACTION

1. This case arises out of damage to the property of TRIUVA Kapitalverwaltungsgesellschaft mbH ("TRIUVA") caused by Baker Hughes Inc.'s ("Baker Hughes US") admittedly defective safety valves, supplied by Baker Oil Tools, and Defendants' failure to warn of the inherent dangers that this equipment posed.

2. Defendants recently admitted that all of the safety valves installed in the caverns owned by TRIUVA at issue in this lawsuit are defective due to their lack of corrosion resistance. In particular, the alloy selected and supplied by Defendants in the safety valves lacked the corrosion resistance required for their intended use.

3. Plaintiff IVG was assigned the rights to TRIUVA's claims in this litigation by written agreement on March 6, 2018.

4. TRIUVA, as trustee and manager for two investment funds, purchased 74 oil and natural gas storage caverns in Etzel, Germany. Thirty contain Defendants' admittedly defective valves, but only two have been repaired permanently. These caverns are used to store very large quantities of oil and natural gas. The Etzel natural gas caverns collectively have a storage capacity of 4.5 billion cubic meters, representing roughly 15% of the total natural gas storage capacity in Germany. TRIUVA's total investment in this cavern field (including the 30 caverns that contain Defendants' defective valves) is approximately $2.5 billion.

5. Defendants' admittedly defective equipment, and Defendants' failure to warn of the risks that this equipment posed, resulted in cavern gas-line ruptures that caused extensive damage to TRIUVA's property. The same defects that caused ruptures in two of the Etzel caverns are also present in the valves installed in 28 other caverns owned by TRIUVA as trustee. This required TRIUVA and its cavern operator Storag (who formerly did business as IVG Caverns Gmbh)[1] to temporarily modify the cavern production string and valves in these 28 caverns to prevent the corroded safety valves from causing further uncontrolled ruptures. Storag developed the caverns and sold them to trustee TRIUVA as part of a competitive bidding process. Storag now operates the 30 caverns at issue.

6. IVG has suffered, and will continue to suffer, significant damages as a direct consequence of Defendants' malfeasance. Baker Hughes US disclosed this contingent liability in its 2014 annual report, and subsequent annual reports, recognizing the materiality of this exposure to its financial condition.

[1] In this Amended Complaint, the cavern operator will be referred to as Storag, although at the time of the events described below it may have been doing business under its prior name IVG Caverns GmbH.

JURISDICTION & VENUE

7. This Court has diversity jurisdiction pursuant to 28 U.S.C. § 1332(a)(2) because the amount in controversy exceeds $75,000, excluding interest and costs, and this action is between Plaintiff IVG, who is a citizen of Germany, and Defendants Baker Hughes US and Baker Oil Tools, who are citizens of Texas.

8. This Court has personal jurisdiction over Defendants because they maintain their principal places of business in Texas, committed a tort in Texas, and/or have continuous contacts in Texas. In particular, Defendants have sold, designed, manufactured and/or marketed defective products in Texas.

9. Venue is proper in this District pursuant to 28 U.S.C. § 1391 because Defendants are headquartered in this District, and because a substantial portion of the events or omissions giving rise to this action occurred in this District.

PARTIES

10. TRIUVA, as trustee for two investment funds, owns 74 natural gas salt caverns located in Etzel, Germany, including 30 that contained Defendants' admittedly defective valves. These caverns are leased to third-party tenants to store oil or natural gas. In the case of natural gas caverns, this is done to take advantage of fluctuations in price, supply and demand in the market for natural gas, such as the difference between prices in summer and winter. Storing natural gas also ensures the security of supplies of natural gas imports in the northwest of Europe, including Germany—particularly when imports are temporarily interrupted or restricted for any reason. TRIUVA was previously known as IVG Institutional Funds GmbH for some of the time relevant to the allegations set forth below. TRIUVA's claims in this litigation were assigned to Plaintiff IVG by written agreement on March 6, 2018.

11. The gas caverns were developed by Storag, who also originally marketed them to the current tenants, and entered into long-term lease agreements. Once all relevant caverns were pre-leased, they were put up for bid. TRIUVA, as trustee for the investment funds, purchased the caverns as part of a highly-competitive bidding process. Each cavern was transferred to TRIUVA when it was finally developed. TRIUVA continues to be the trustee-owner of the caverns and employs Storag to serve as the cavern operator. Pursuant to an operating agreement, Storag receives a fixed management fee from TRIUVA in exchange for the services it provides:

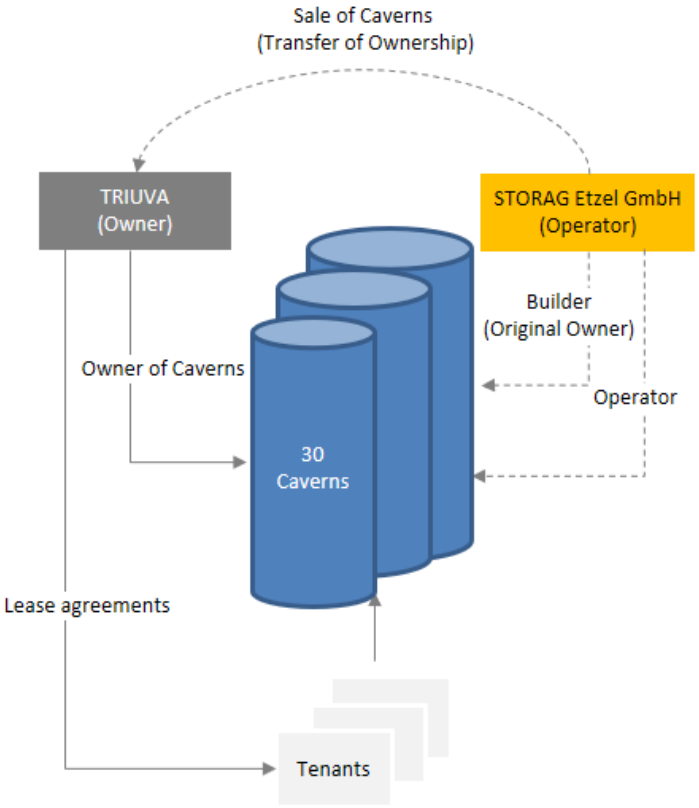

Figure 1. TRIUVA's Ownership of the Caverns

12. Plaintiff IVG is a private company organized under the laws of Germany. It acquired and managed commercial real estate in Germany. In consideration for the assignment of TRIUVA's claims in this litigation, IVG agreed to, among other things, compensate TRIUVA for any repair costs incurred in connection with the defective valves to the extent such costs are

not otherwise reimbursed to TRIUVA. IVG previously had an indirect interest in 94% of TRIUVA—through another entity called IVG Funds Holding GmbH—until TRIUVA was sold.

13. Defendant Baker Hughes US is a Delaware corporation with its principal place of business in Houston, Texas. Its corporate headquarters are located at 2929 Allen Parkway, Houston, Texas 77019. Baker Hughes US supplies products, technology services, and systems to the oil and natural gas industries worldwide. Baker Hughes US is a citizen of Delaware and Texas.

14. Baker Hughes US markets itself as "a leading supplier of oilfield services, products, technology and systems to the worldwide oil and natural gas industry."[2] It operates in more than 80 countries around the world, and as of 2017, had approximately 64,000 employees. Baker Hughes US manufactures products that are used in various oil and natural gas operations, including products used to control the flow of oil and natural gas products. In 2017, it generated approximately $17.3 billion in revenue.[3]

15. Defendant Baker Hughes Oilfield Operations, Inc. d/b/a Baker Oil Tools, Inc. ("Baker Oil Tools") is an affiliate of Baker Hughes US which is in the business of assembling, installing and supplying Baker Hughes equipment. Baker Oil Tools is based in Houston, Texas. It has held itself out as "one of the world's leading manufacturers and suppliers of underground safety valves and equipment," and as having "a wealth of experience" in off-shore and on-shore operations.

16. In July 2017, General Electric completed a buyout of Baker Hughes US, merging it with its own oil and gas equipment and services operations to create the world's second-largest

[2] Fiscal Year 2017 Form 10-K
[3] *Id.*

oilfield service provider by revenue. The new company does business as "Baker Hughes, a GE company."

17. Baker Hughes has represented to consumers that it is "a responsible corporate citizen committed to the protection of people, the environment and company resources while supplying products and services in a sustainable manner."[4] It has also claimed that "Baker Hughes policy is to conduct business in a manner that protects people, assets, intellectual property, and the environment."[5] Just this past year the company issued a policy memo called "Do The Right Thing, Always" in which it stated that Baker Hughes' "decisions have a lasting and profound impact. That's why we choose to do the right thing—always." The memo also claims that "[w]e identify and stop any unsafe acts before they happen. Everyone is responsible and empowered to observe, intervene, and report unsafe conditions and behaviors immediately." The admittedly defective valves that Defendants manufactured, marketed and sold for use in TRIUVA's caverns, and Baker Hughes' conduct, fell dangerously short of these commitments.

FACTUAL ALLEGATIONS

A. The Etzel Caverns

18. Eztel, Germany is home to a massive, dome-shaped underground salt deposit or salt dome. This salt dome is approximately 7.5 miles long, 3 miles wide, and spans from approximately 2,300 feet to 13,000 feet below the surface. Artificial caverns can be carved into the salt dome by using water to etch (or leach) away the salt and create open spaces with depths of up to several thousand feet. These salt caverns are ideal for storing natural gas because the

[4] http://www.bakerhughes.com/company/health-safety-environment, accessed 9/20/2015.
[5] http://assets.cmp.bh.mxmcloud.com/system/v1/92d9dfe749a9c2965fd861883913df4e/HSE_S-Policy_Poster_REV-12_07-2013.pdf, accessed 9/20/2015.

salt creates an impermeable, air-tight barrier that prevents the gas from escaping—even under very high pressures. The pressure in the caverns can be as high as 2,900 pounds per square inch.

19. The first caverns in the Etzel salt dome were created in the 1970s, and new caverns have been created in various phases since that time. There are currently 74 natural gas and oil storage caverns owned by TRIUVA, as trustee, at the Etzel site.

20. Storag is in the business of creating, operating, maintaining and marketing salt caverns, for oil and gas storage. Pursuant to an operating agreement with TRIUVA, for which it receives a fixed management fee, Storag operates and maintains each of the caverns that TRIUVA owns as trustee. In 2008, after a competitive bidding process, TRIUVA entered into an agreement with Storag by which TRIUVA committed to purchase the caverns that Storag owned or planned to develop in Etzel, Germany.

21. Storag and Baker Hughes Deutschland GmbH, a German subsidiary of Baker Hughes US, arbitrated claims for breach of warranty by Baker Hughes Deutschland GmbH under a contract it had with Storag relating to the provision of the safety equipment in caverns developed and operated by Storag. A description of the result of that arbitration, and Defendants' subsequent admission of liability on the merits for each of the causes of action alleged in this complaint are provided below.

B. The Completion Equipment

22. Each underground cavern contains (i) a piping structure below the surface called a production string, and (ii) a wellhead, which controls and shuts off the gas stream. The production string connects various pieces of equipment and other material—some of which was manufactured by Baker Hughes US, and some of which was not. Natural gas passes through the production string as it is injected into and withdrawn from the cavern at high pressure. At the wellhead, a field pipeline connects the cavern to the above-ground facilities of the tenants. In

these facilities, the gas is treated and then compressed before it is injected into the gas grids. The Etzel gas storage facilities are connected to the German and Dutch gas grid. Tenants inject natural gas into, and withdraw natural gas from, their leased caverns through their above-ground facilities.

23. Given the enormous volumes and pressures involved—which can be as high as 270 million cubic yards and 2,900 pounds per square inch—ensuring that natural gas does not escape from the caverns is paramount. For this reason, each cavern is required by German law to have several safety barriers. At the surface, the wellhead includes shut-off valves that can seal off the production string between the cavern and the field pipeline.

24. In addition, the production string is protected by a second safety barrier called a sub-surface safety valve ("SSSV"), which is located approximately 50 meters below the surface and automatically seals off the production string if the wellhead shut-off valves or the wellhead itself are damaged, or if the wellhead fails. Immediately outside the production string, two packers hold the production string in place within the outer casing, and also seal off the caverns from a liquid-filled annulus that serves as a pressure-controlled safety measure to detect leakages from the production string. The production string in TRIUVA's caverns is over 1,300 yards long:

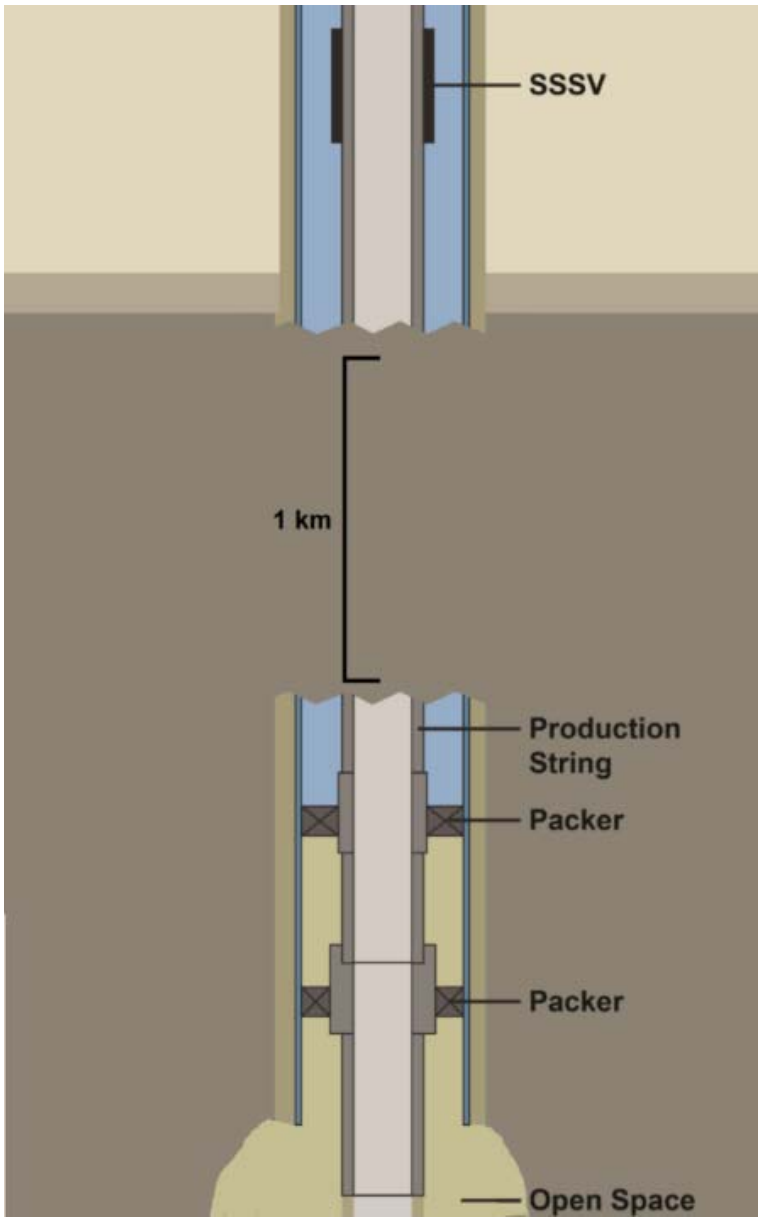

Figure 2. Subsurface Completion Equipment (not to scale)

25. An SSSV either shuts off automatically when it detects anomalous gas flows, or it can be operated by a hydraulic control line that raises and lowers a flapper to open and shut the valve. When the valve is shut, it prevents natural gas from passing through the production string out of the cavern. The SSSV is connected to the production string at both the top and bottom:

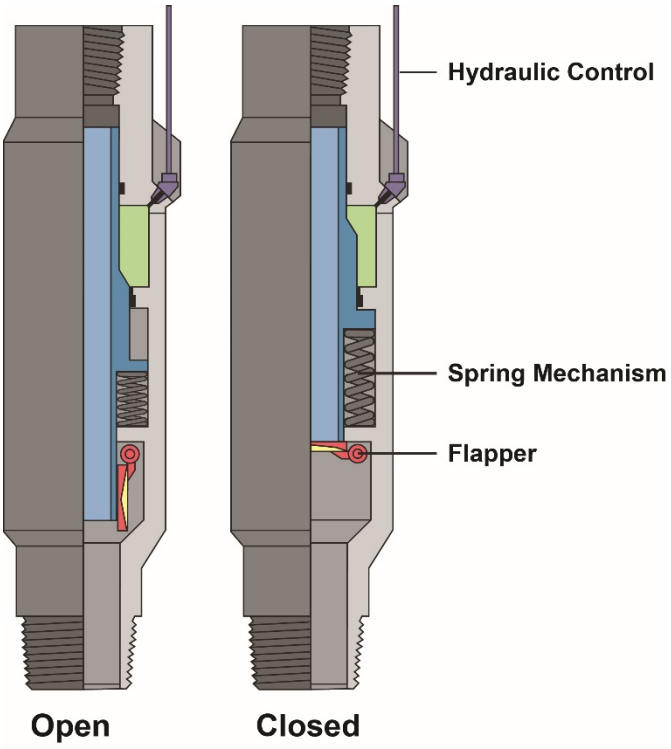

Figure 3. Basic Mechanics of an SSSV

26. Because of the longer life cycle (more than 30-40 years), it is very common to weld the entire production string, including an SSSV, in a salt cavern to secure gas-tight connections for the life of the equipment. This has been the common practice in Germany's gas storage industry since approximately 1990. The production string is under extreme tension due to temperature differences between injection and withdrawal operations. The string can extend or contract due to these temperature differences by plus or minus 15 inches under a significant load and pretension. Welding ensures a gas-tight seal and is well-suited for salt caverns given the scale, equipment and environment. This practice stands in contrast to traditional exploration and production (E&P) wells, which, because of their short life cycle, stable operating temperatures, scale and hostile conditions, more commonly rely on threading the ends of the SSSV and bolting the SSSV to the production string in an attempt to create a metal-on-metal seal.

27. Defendants knew that the SSSVs they were manufacturing, marketing and selling for use in salt caverns in Europe, including those that were sold for installation in TRIUVA's caverns, would be welded.

28. The integrity of the SSSV—as one of two safety barriers—and its welds are critical to the safety of a salt cavern when it is in operation. Any weaknesses in the integrity of the equipment or welds could cause it to rupture. A malfunctioning SSSV means that only one safety valve at the surface is preventing so-called "blow-out"—natural gas rapidly escaping from the caverns. A rupture also increases the risk of damaging the wellhead because the production string loses pretension. Damage to the wellhead can mean, in a worst-case scenario, that the shut-off valve at the wellhead also malfunctions, causing blow-out. If the natural gas released during a blow-out were to ignite, it could create a large fire endangering the property of TRIUVA and others, individuals, and the surrounding environment. Even without a fire, blow-out poses significant dangers. For this reason, standard industry practice, and German administrative law, requires a dual-barrier safety system.

C. The Defective Valves Designed, Marketed And Sold By Defendants.

29. **Order No. #1.** In early 2009, cavern producer Storag (then IVG Caverns) contracted with Baker Oil Tools, which is a predecessor of Baker Hughes (Deutschland) GmbH ("Baker Hughes Germany"), to supply the following completion equipment in ten caverns owned by TRIUVA as trustee: (i) an SSSV, which is connected to the production string at the top and bottom by flow couplings and pup joints; (ii) two packers; and (iii) additional components necessary to install the packers. This equipment was installed in caverns K303-306, K312-313, K319-321 and K327. This equipment was ordered as part of a solution specifically designed and recommended by Baker Hughes US.

30. The SSSVs delivered by Baker Hughes Germany for these caverns were designed, manufactured and marketed by Baker Hughes US. In particular, Baker Hughes Germany delivered ten Baker Hughes Model "Onyx-5" Tubing Retrievable Safety Valves, Product Family No. H82624, which embody several Baker Hughes US patents.

31. The literature that Baker Hughes US distributed about the Onyx-5 SSSV includes several warnings about, for example, mixing hydraulic fluids, equalizing differential pressure prior to opening the valve, and the proper assembly with flow couplings. It contains no warnings about the dangers of welding the SSSV even though Baker Hughes US (a) knew it supplied the SSSVs for a welded installation, and (b) was aware of the susceptibility of corrosion in a welded installation in light of, among other things, its own Material Specification.

32. This literature also directs consumers to Baker Hughes US' Oklahoma office for any inquiries "concerning design, manufacture and testing" of the Onyx-5.

33. **Order No. #2.** In early 2010, Storag hired Baker Hughes Germany to install Completion Equipment in additional caverns now owned by TRIUVA as trustee. This order involved providing completion equipment for caverns K307-311, K314-316, K322-324, K328-332, and K335-338. The SSSVs installed by Baker Hughes Germany in these caverns were also Baker Hughes Model "Onyx-5" Tubing Retrievable Safety Valves.

34. **Order No. #3.** In a subsequent order in April 2010, Storag hired Baker Hughes Germany to provide a backup set of completion equipment that could be stored for use in the future if one of the other sets needed to be replaced. Storag ultimately decided to install this backup set in Cavern K345. Again, the SSSV was a Baker Hughes Model "Onyx-5" Tubing Retrievable Safety Valve.

35. The first order was preceded by a Request for Quotation ("RFQ"), in which Storag specified the intended use of the caverns and precisely what was required of the SSSVs that would be installed in TRIUVA's caverns, including that the SSSVs be welded to flow couplings at the top and bottom by the supplier. These RFQs also specified that the material used in the SSSV must be suitable for these requirements, and that the supplier had to select an appropriate material to be used in TRIUVA's caverns. It was thus incumbent on Defendants to ensure that the material used in these SSSVs was safe for a welded installation.

36. In response to the RFQs, Baker Oil Tools represented that it is "one of the world's leading manufacturers and suppliers of underground safety valves and equipment," and had "a wealth of experience" in off-shore and on-shore operations. It also represented that it would deliver equipment suitable for a "fully welded design," and that it had provided similar equipment to other customers in the past.

37. But Defendants have now admitted that the Onyx-5 SSSVs that Baker Hughes US manufactured and Baker Oil Tools supplied were defective in all 30 caverns. In particular, a material that Baker Hughes US selected for the use—AISI 420mod, a particular type of martensitic stainless steel—is susceptible to intergranular corrosion when exposed to the heat from the welding process and exposed to salt water during the brining process and during operations when wet natural gas flows through the production string.

38. Baker Hughes US originally developed the AISI 420mod SSSVs to be used in the larger, more hostile, and more profitable (for Baker Hughes US) deepwater threaded installations of its other clients, such as Qatar. Because of their size, the hostile conditions, and shorter life cycle, these larger installations relied on threading and bolting the SSSVs into the production strings rather than welding them. Defendants knew (in light of, among other things, their own

Material Specification for that particular alloy) that AISI 420mod was susceptible to intergranular corrosion when it was welded, and thus it is dangerous to use in a welded installation. But rather than spend the time, effort and money to design an SSSV that was safe for use in a welded installation, Baker Hughes US simply sold SSSVs using the same material it had already designed for bolted-threaded installations, and that was not designed for welding.

[redacted]

39. Defendants knew that these SSSVs were dangerous when welded, but put TRIUVA's property, other individuals, and the public at risk by selling these SSSVs to for use in TRIUVA's caverns anyway. Defendants chose the defective AISI 420mod material simply because it was more readily available in stock, which enabled them to meet the deadline to be awarded the lucrative contract. Defendants did so despite explicit internal warnings not to expose this material to the temperature range that inevitably occurs during the welding process. Defendants knew or reasonably should have known of the risk of rupture from intergranular corrosion as a result of the defective product design.

40. Defendants did not adequately warn that welding its SSSVs would create a serious risk of rupture or blowout. None of the materials Baker Hughes US provided warned that welding the SSSVs could cause intergranular corrosion. Had Baker Hughes US warned TRIUVA and Storag that the SSSVs that it manufactured and sold created a serious risk of rupture or blowout, Storag and TRIUVA would have insisted on using alternative materials and/or changing the configuration of the equipment. Because Defendants failed to warn of these

design defects and attendant risks, the defective SSSVs were welded and installed in TRIUVA's caverns.

41. Defendants knew of the defects in the Onyx-5 SSSV, and yet concealed them in an effort to ensure that they would be awarded the contract to supply the valves to Storag. In particular, Defendants knew that the contract required them to deliver SSSVs that would be welded to ensure a long term safe, air-tight seal. Defendants also knew that the AISI 420mod material used in the Onyx-5 SSSV becomes brittle and loses its corrosion resistance when it is exposed to the heat of the welding process. Yet, in an effort to win the contract with Storag, Defendants warned neither Triuva nor Storag. They also concealed that neither Defendants nor any of their subsidiaries had ever before manufactured and installed welded SSSVs anywhere in the world and had no experience whatsoever with welded SSSVs. The SSSVs installed in the TRIUVA caverns were the first Onyx-5 SSSVs that had ever been put in a welded installation by Defendants.

D. The Ruptures In Caverns K311 & K334 And Damage To TRIUVA's Property.

42. **Rupture in K311.** On February 10, 2014, the Baker Hughes US SSSV installed in K311 ruptured. As a result of the rupture, the production string in Cavern K311 broke off at the lower weld of the SSSV to the flow coupling (Weld #7). The SSSV rupture released the pretension of the production string, placing tremendous force on the packer at the bottom of the cavern. This destroyed the packer, causing the production string below Weld #7 to fall into the cavern. This portion of the production string was lost and fully destroyed. The upward forces generated by the loss of pretension also damaged the wellhead. A subsequent independent investigation revealed that the Baker Hughes US SSSV in K311 had ruptured due to

intergranular corrosion. Because the SSSV was admittedly defectively designed, it was not suitable for welding.

43. The Onyx-5 SSSVs were designed such that the material adjacent to the top flowing coupling was AISI 410 and the material adjacent to the bottom flow coupling was AISI 420mod. AISI 420mod stainless steel alloy is less suitable for welding than AISI 410 rated stainless steel alloy. The rupture in both Cavern K311 and K334 occurred along the AISI 420mod weld (Weld #7) at the bottom flow coupling. This material made the joint particularly vulnerable to rupture given the additional stress that would be placed on it. Because the material was not suitable for welding, the weld that joined the SSSV to the bottom flow coupling ruptured:

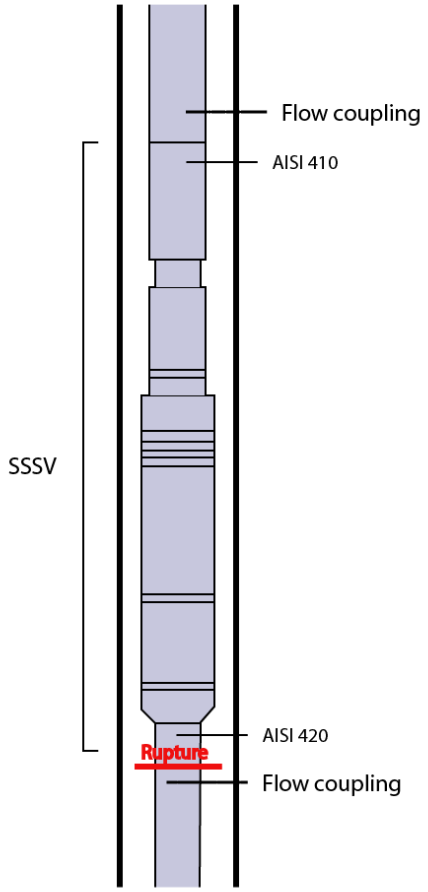

Figure 4. Anatomy of the Rupture

44. As noted above, the rupture caused extensive damage to the cavern separate and apart from the damage to the defective SSSV itself. This includes, without limitation, extensive damage to the entire 1,300 yard production string, the packers, and the above-ground wellhead, also known as a "Christmas Tree" because of its tree-like configuration above the surface. The wellhead damage occurred in part because the production string is under pretension, which unleashes enormous upward forces when there is a rupture in the production string.

45. **Rupture in K334.**[6] On November 1, 2014, the Baker Hughes US SSSV installed in K334 also ruptured. The SSSV in K334 ruptured along the same weld and in the same location as K311. The Baker Hughes US SSSV in K334, which had the same defective design, also ruptured due to intergranular corrosion.

46. In the K334 rupture, the packers were able to hold the production string in place, and thus the equipment below the rupture point did not fall into the cavern. Nevertheless, the rupture in K334 also caused extensive damage to that cavern separate and apart from the damage to the defective SSSV itself. This includes, without limitation, damage to the production string, the packers, and the above-ground wellhead of the cavern.

47. In the aftermath of the cavern ruptures, TRIUVA initiated with Storag a root cause analysis with Baker Hughes US, and requested support for an immediate and safe way to get the caverns back into operation. Baker Hughes US sent representatives from Texas to Germany to participate in discussions with management and engineers about the ruptures in TRIUVA's cavern, and the state of the remaining caverns. This included a team of engineers in the United States.

[6] At the time of the original filing TRIUVA did not yet own cavern K334, but it now does as trustee for the cavern funds.

48. The first such meeting with management was held in October 2014 and was attended by experts and senior executives from Baker Hughes US. This was followed approximately one month later by a technical meeting with operational and technical employees from Baker Hughes US and Baker Hughes Germany. Additional meetings with senior Baker Hughes US management occurred from December 2014 through May 2015. Additional technical meetings were held in the same timeframe.

49. Defendants refused to repair or indemnify for repairs that needed to be performed in the summer of 2015. Among other things, Defendants claimed that they no longer had the products needed to remediate the problems caused by their defective valves.

50. After the rupture, caverns K311 and K334 were no longer operational, and had to undergo extensive and costly re-completion repairs to make them operational again. Tenant OMV terminated its lease for K311. To retain OMV as a tenant, TRIUVA had to pay approximately $3 million in compensation. To make K311 and K334 operational again on schedule, TRIUVA had to remove the defective valve and replace it with an undesirable threaded and bolted SSSV that does not have the long term gas-tight welded seal that was purchased for the caverns. Welded SSSVs avoid losing long-term gas tightness, which a threaded connection will experience over time. A welded seal is guaranteed for the life of the equipment; a threaded and bolted configuration is not. Finally, a full integrity test of the wells had to be conducted, and the entire production setup had to be tested and verified before the tenants could resume use of the caverns.

51. In addition, because TRIUVA realized (and Defendants have only just admitted) that every Baker Hughes SSSV that was installed in its caverns in connection with Orders #1-3 was defective, it was forced to undertake 28 further costly interim repairs to temporarily avoid

any further ruptures caused by the corroded and brittle equipment. Without these interim repairs to ensure the short-term safety and integrity of the remaining 28 caverns, TRIUVA would have already lost the operating license for these caverns, and also would have already lost not only the short-term rent until repairs could be completed, but also the long-term tenants for the entire lease agreement.

52. This interim fix involved installing a straddle in each of the 28 caverns that have not ruptured to secure and support the defective SSSV. A straddle is essentially a tube of an approximately 30% narrower diameter that is placed into the SSSV to relieve some of the stress being placed on the defective, corroding AISI 420mod material at Weld #7. With the straddle installed inside the SSSV, the flapper is unable to close, rendering it useless. As a temporary secondary safety barrier, a so-called storm choke has been installed several meters above the straddled SSSVs.

53. The functions and the safety features of the storm choke are substantially inferior to the original Onyx-5 SSSV that TRIUVA purchased. In particular, the storm choke cannot be controlled from the surface as required by German law and the German mining authorities overseeing the caverns. The valve also only closes when there is complete blow-out, and not for other lower-pressure leakages that could be prevented by the Onyx-5. For these reasons, TRIUVA was only able to obtain a time-limited operating license that grants it only a temporary exemption from the requirement to have a surface-controlled SSSV so that a long-term solution can be put into place.

54. As described above, TRIUVA's property has been damaged by the ruptures and defects in the SSSVs. At the very least—in addition to this physical damage to the production strings, packers, and wellheads noted above—TRIUVA has lost millions of dollars in rent to

date, and will lose rent in the future during the periods the caverns are fully and finally repaired. This is currently estimated to be at least $3 million to $5 million per cavern per year. In addition to the millions of lost rent already incurred, the full extent of the future lost rents will depend on whether final repairs are completed with gas still in the caverns (under gas), or with the gas removed (under brine).

55. The caverns themselves have also lost substantial value. The value of TRIUVA's caverns is determined in large part by the income they are able to generate from long-term lease agreements. For this reason, losing the ability to collect rent for the caverns during repairs diminishes the overall value of the cavern.[7] The damage to TRIUVA's caverns from having to, among other things, install straddles and storm chokes has also rendered them well below the state of art, which further diminishes their appeal to long-term lessees, and thus the overall value of the caverns. Indeed, lessees are already demanding compensation to account for the diminished state of the cavern completion equipment. Among other things, the now-inoperable straddled SSSV in the production strings of the 28 caverns reduced the diameter of the production string, and altered its entire structure, which narrowed the diameter for flow of natural gas:

[7] Contrary to Baker Hughes' suggestion at the August 2, 2018 status conference, TRIUVA collects rent in its capacity as trustee, which is entirely separate from its *operating profits*, which were covered by a prior profit-loss transfer agreement that was once in place between TRIUVA and IVG.

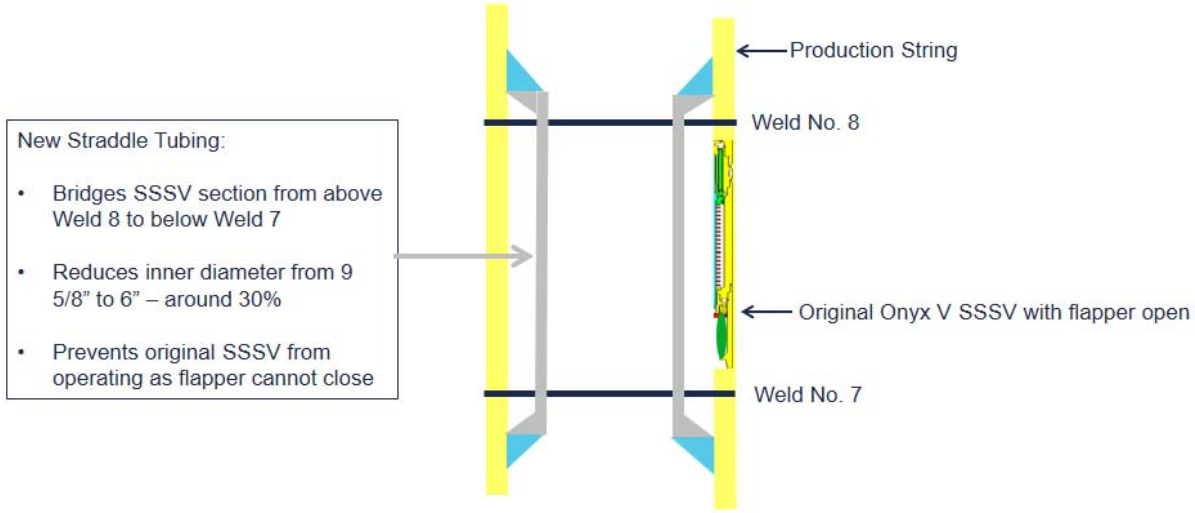

Figure 5. Straddle Installed in Defective SSSV As Temporary Fix

56. The straddle prevents the SSSV's flapper from closing, as illustrated below. Figure 6 shows an SSSV with a closed flapper depicted in red. The inability to close the flapper means that the valve cannot be closed from the surface as required by German law:

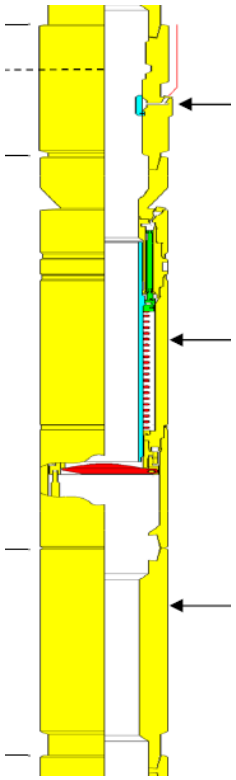

Figure 6. Properly Closing SSSV Flapper

E. Arbitration Between Storag and Baker Hughes Germany.

57. In arbitration, Storag pursued contract claims under German law against Baker Hughes Germany for the specific harm *Storag* incurred due to the defective SSSVs that Baker Hughes Germany delivered. [redacted]

58. [redacted]

59. [redacted]

60. [redacted]

[redacted]

61. [redacted]

62. [redacted]

F. Defendants Conceded Liability On The Merits Of Counts One Through Three As Alleged Below.

63. At the hearing in this action on August 2, 2018, counsel for Defendants admitted that the 31 valves that they designed, manufactured and supplied for TRIUVA's caverns were defective [redacted] (8/2/2018 Hearing Tr. at 26:7-18.)

G. Subsequent Additional Ruptures Elsewhere In Germany.

64. Two similar ruptures occurred in May and June of 2014 in caverns that used identical Baker Hughes US SSSVs in a different cavern field owned and operated by a non-party in the town of Epe, Germany in North Rhine-Westphalia. The products used the same material that ruptured in TRIUVA's caverns, and the ruptures were also caused by intergranular corrosion of the same defective welded material AISI 420mod. Defendants were aware of this root cause of the parallel ruptures at the latest in Spring 2015, [redacted] Baker Hughes US even refused to support cavern operators RWE and Storag in performing a joint root cause analysis.

H. Baker Hughes US Disclosures Regarding The Defective Valves

65. In its 2014 annual report, and in each annual report since (including 2017), Baker Hughes US disclosed that it was investigating "possible equipment failure" in TRIUVA's caverns "which includes certain of our products," and that it was "investigating the cause of the possible failure and, if necessary, possible repair and replacement options for [its] products." (Form 10-K, Years 2014-2017.) It has also disclosed the existence of this lawsuit.

66. Notwithstanding this disclosure, Baker Hughes US has refused to repair, replace, or remediate the defective products or assume any responsibility for their failure. Baker Hughes US also warned that "[s]imilar products were utilized in other natural gas storage systems for this

and other customers." (*Id.*) Baker Hughes US identified these issues as "material" to its financial condition. Material issues are "those matters as to which an average prudent investor ought reasonably to be informed before buying or selling any security of the particular company." In 2017, General Electric paid approximately $7.49 billion in cash and transferred approximately 37.4% of GE Oil & Gas business assets and liabilities in exchange for approximately 62.6% of Baker Hughes US' assets and liabilities.

67. In its Form 10-Q filing on July 30, 2018, Baker Hughes US represented to its investors that, "The Company is vigorously contesting the claims made by TRIUVA in the Houston Federal Court." This is false. As described above, Baker Hughes US has actually conceded liability on the merits for each Count of this Amended Complaint because it admits that the valves it designed, manufactured and supplied were defective.

CLAIMS FOR RELIEF

COUNT ONE

Strict Products Liability (Design Defect)

68. Plaintiff IVG incorporates by reference the allegations set forth in Paragraphs 1 through 67 of this Complaint.

69. At all times material hereto, Defendants were engaged in the business of designing, manufacturing, assembling, selling, leasing, marketing, maintaining, and/or supplying the Model "Onyx-5" Tubing Retrievable Safety Valve, whose weld rupture is the basis of this lawsuit. Defendants placed the SSSV into the stream of commerce for use in welded installations.

70. The Model "Onyx-5" Tubing Retrievable Safety Valves were in a defective condition which rendered them unreasonably dangerous at the time they were designed by Baker

Hughes, taking into consideration the utility of the valves and the risk involved in using them. In particular, as described above, the design of the "Onyx-5" Tubing Retrievable Safety Valve was unreasonably dangerous because, among other things, the materials used in the Onyx-5 subsurface safety valve were susceptible to intergranular corrosion when welded.

71. A safer alternative design would, among other things, use material that would not be susceptible to intergranular corrosion when welded.

72. The defective design of the "Onyx-5" Tubing Retrievable Safety Valve was a producing and proximate cause of the injuries to TRIUVA's property. In particular, the subsurface safety valve installed in TRIUVA's caverns K311 and K334 experienced intergranular corrosion as a result of Baker Hughes' defective design, which caused the SSSV to rupture and damage TRIUVA's property. The SSSVs in TRIUVA's remaining caverns suffer from the same defective design, and therefore the production strings have had to be extensively modified as a temporary safety fix to prevent further uncontrolled ruptures.

73. For these reasons, Defendants are strictly liable to Plaintiff IVG, as the subsequent assignee of TRIUVA's claim, under applicable products liability law without regard to proof of negligence and/or gross negligence in an amount to be determined according to proof.

COUNT TWO

Strict Products Liability (Marketing Defect)

74. Plaintiff IVG incorporates by reference the allegations set forth in Paragraphs 1 through 73 of this Complaint.

75. At all times material hereto, Defendants were engaged in the business of designing, manufacturing, assembling, selling, leasing, marketing, maintaining, and/or supplying the Model "Onyx-5" Tubing Retrievable Safety Valve, including the valves installed in

TRIUVA's caverns that are the basis of this lawsuit. Defendants placed these valves into the stream of commerce for use in welded installations.

76. The Model "Onyx-5" Tubing Retrievable Safety Valves were in a defective condition which rendered them unreasonably dangerous at the time they were marketed by Defendants. In particular, at the time they marketed the valves Defendants knew or should have reasonably foreseen (in light of, among other things, their own Material Specification) the potential risk that the "Onyx-5" Tubing Retrievable Safety Valve would suffer from intergranular corrosion in a welded installation, and thus would be at a significant risk of rupturing, yet Defendants failed to provide adequate warnings of these dangers and/or proper instructions for safe use.

77. The risk of harm from intergranular corrosion is inherent in the Model "Onyx-5" Tubing Retrievable Safety Valve, and/or these risks of harm arise from a reasonably anticipated use of the valve—a welded installation in a salt cavern.

78. The absence of adequate warnings and/or instructions regarding these dangers of the "Onyx-5" Tubing Retrievable Safety Valves rendered the valves unreasonably dangerous.

79. Defendants' failure to provide adequate warnings and/or instructions regarding the dangers of the "Onyx-5" Tubing Retrievable Safety Valve was a producing and proximate cause of the injuries to TRIUVA's property. Had TRIUVA been warned of these dangers of the "Onyx-5" Tubing Retrievable Safety Valve it would have insisted on an alternative valve and/or changed the configuration of the anticipated Safety Equipment. Because it had no adequate warning, TRIUVA permitted the "Onyx-5" Tubing Retrievable Safety Valves to be installed in its caverns. The valves installed in caverns K311 and K334 experienced intergranular corrosion, which caused these valves to rupture and damage TRIUVA's property. The valves in

TRIUVA's remaining caverns suffer from the same fatal defect, and the production strings have had to be extensively modified as a temporary safety fix to prevent further uncontrolled ruptures.

80. For these reasons, Defendants are strictly liable to Plaintiff IVG, as the subsequent assignee of TRIUVA's claim, under applicable products liability law without regard to proof of negligence and/or gross negligence in an amount to be determined according to proof.

COUNT THREE

Negligence

81. Plaintiff IVG incorporates by reference the allegations set forth in Paragraphs 1 through 80 of this Complaint.

82. At all times material hereto, Defendants were engaged in the business of designing, manufacturing, assembling, selling, leasing, marketing, maintaining, and/or supplying the Model "Onyx-5" Tubing Retrievable Safety Valve, including the valves installed in TRIUVA's caverns that are the basis of this lawsuit.

83. Defendants had a duty to exercise reasonable care in the design and marketing of the Model "Onyx-5" Tubing Retrievable Safety Valve.

84. Defendants knew or should have reasonably foreseen the potential risk that the "Onyx-5" Tubing Retrievable Safety Valve would suffer from intergranular corrosion, and thus would be at a significant risk of rupturing.

85. Defendants breached their duties of care by, among other things, (i) designing the Model "Onyx-5" Tubing Retrievable Safety Valve in such a manner that it exposed TRIUVA's property to an unreasonable risk of rupture-related harms caused by intergranular corrosion; and/or (ii) failing to warn users of the risk that the valve would rupture due to intergranular corrosion (which included ignoring and violating Baker Hughes' own Material Specification).

86. Defendants' breach of their duties of care was the proximate cause of the injuries to TRIUVA's property. In particular, the valves installed in TRIUVA's caverns K311 and K334 experienced intergranular corrosion, which caused these valves to rupture and damage TRIUVA's property. Had TRIUVA been warned of these dangers of the "Onyx-5" Tubing Retrievable Safety Valve it would have insisted on an alternative valve and/or changed the configuration of the anticipated Completion Equipment. Because they had no adequate warning, TRIUVA permitted the "Onyx-5" Tubing Retrievable Safety Valves to be installed in its caverns. The valves in TRIUVA's remaining caverns suffer from the same fatal defective design and/or inadequate warning.

PRAYER FOR RELIEF

Plaintiff IVG seeks judgment against Defendants in an amount to be determined at trial, and to grant relief as follows:

1. Compensatory damages;
2. Punitive damages;
3. Reasonable and/or statutory attorneys' fees;
4. Costs of suit;
5. Pre-judgment and post-judgment interest thereon; and
6. Such other and further relief as the Court deems just, appropriate and equitable.

DEMAND FOR JURY TRIAL

Plaintiffs hereby request a trial by jury as to all issues so triable.

Dated: August 10, 2018

Respectfully submitted,

KIRKLAND & ELLIS LLP

/s/ Mark Holscher
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Counsel for Plaintiff IVG Immobilien GmbH

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been filed with the Court via the Court's electronic filing system pursuant to the Federal Rules of Civil Procedure on August 10, 2018, with a courtesy copy sent to all parties by email.

/s/ Mark Holscher
Mark Holscher